REMARKS

Claims 1 – 13 are presently pending. In the above-identified Office Action Claims 1 – 3, 7 – 8, and 12 – 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hemmati ('480). Claims 4, 5, 9 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hemmati in view of Waarts *et al.* ('305). Claims 6 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hemmati in view of Fermann ('709).

By this Amendment, Applicants have amended Claims 1, 3, 7, and 12 and added new Claims 14 – 24.

For the reasons set forth more fully below, the subject application is deemed to properly present claims patentable over the prior art. Reconsideration, allowance and passage to issue are respectfully requested.

The present invention addresses the need in the art for a short pulse length, high-energy eye-safe laser. The art is addressed by the laser of the present invention, which includes an active medium disposed within a resonator; a material operationally coupled to the medium and having a transmittance property that varies in response to incident energy; and an arrangement disposed external to the medium for applying energy to the material **with a pulse that is shorter than or equal to a round trip delay time of light within said resonator**.

The invention is set forth in Claims of varying scope of which Claim 1 is illustrative. Claim 1 recites:

> 1. A laser comprising:
> an active medium disposed within a resonator;
> a material operationally coupled to said medium and having a transmittance property that varies in response to incident energy; and
> means disposed external to said medium for applying energy to said material, **said means having a response time that is shorter than or equal to a round trip delay time of light within said resonator**. (Emphasis added.)

None of the references, taken alone or in combination, teach, disclose or suggest the invention as presently claimed. That is, none of the references teach, disclose or suggest a laser with an active medium disposed in a resonator, a material having a transmittance property that varies in response to incident energy and means for applying energy to the material with a response time that is shorter than or equal to a round trip delay time of light within the resonator.

In the Office Action, the Examiner relied primarily on Hemmati ('480). Hemmati purports to teach a laser with an optically driver Q-switch. The Examiner suggests that Hemmati teaches the invention as claimed. However, there is no teaching in the reference of a laser with an active medium disposed in a resonator, a material having a transmittance property that varies in response to incident energy and **means for applying energy to the material with a response time that is shorter than or equal to a round trip delay time of light within the resonator**.

Waarts and Fermann, cited to overcome the shortcomings of Hemmati and Chemla, cited but not applied, taken alone or in combination with Hemmati, also fail to teach, disclose or suggest the invention as claimed. Accordingly, Claim 1 and the Claims dependent thereon are believed to be allowable.

New Claim 14 is drawn along the lines of Claim 6. In the rejection of Claim 6, the Examiner suggested that Hemmati and Fermann in combination teach the invention as claimed. Specifically, the Examiner relies on the teaching provided at col. 7, line 39 of Fermann which purports to teach the bonding of beam homogenizing element 1103 to the back end a lens array to form a 'quasi-monolithic single optical element'. However, Claims 6 and 14 call for a 'quasi-monolithic diode laser assembly ring'. Clearly, Fermann's combination homogenizing element and lens array is not a diode laser assembly ring. Accordingly, Claim 14 should also be allowable.

Finally, new Claims 15 - 24 have been added for consideration. These Claims are based on the teaching provided at page 10, line 20 through page 12, line 5 and in Figures 8 – 10 of the present Specification. Inasmuch as the references also fail to show a laser capable of dual-mode operation as claimed, these Claims should be allowable as well.

Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

Respectfully submitted,
Kalin Spariosu *et al.*

By _____
John E. Gunther
Agent for Applicants
Registration No. 43,649

WJB/lc

Raytheon Company
Corporate Patents and Licensing
EO/E4/N119
P.O. Box 902
El Segundo, CA 90245

(310) 647-3723
(310) 647-2616 facsimile